IN THE CLAIMS

1. (Currently Amended) A recording apparatus, comprising:

(a) a recording medium, having predetermined anisotropic optical properties, comprising at least one anisotropic vector; and

(b) a transfer mechanism, adapted for physically transferring a portion of said recording medium to a carrier in a selectively defined pattern, said transferred portion retaining a state of said predetermined anisotropic optical properties.

2. (Currently Amended) The recording apparatus according to claim 1, wherein said recording medium comprises a polymer having crystalline properties, wherein a crystalline domain of said polymer recording medium has ~~anisotrophic~~ anisotropic properties.

3. (Currently Amended) The recording apparatus according to claim 1, wherein at least two recording media are provided, each having distinct ~~anisotrophic~~ anisotropic properties, wherein said transferring means selects from available recording media to control an ~~anisotrophic~~ anisotropic recording pattern.

4. (Original) The recording apparatus according to claim 1, wherein the recording medium is transferred in a pattern defined by a cipher.

5. (Original) The recording apparatus according to claim 4, wherein a message is encoded on said carrier comprising a self-authenticating description of said pattern.

6. (Currently Amended) The recording apparatus according to claim 3, wherein the pattern comprises a distribution of anisotropic properties on the carrier.

7. (Original) The recording apparatus according to claim 1, wherein the recording medium comprises a fluorescent dye composition.

8. (Currently Amended) A recording medium, comprising a polymer film having adhered thereto a transfer layer having a predefined ~~anisotrophic~~ anisotropic optical property, the recording medium being adapted to selectively transfer portions of the layer to a recording medium under influence of a print head while maintaining a state of the predefined anisotropic property.

9. (Currently Amended) A recording method, comprising the steps of:

(a) providing a recording medium, having ~~anisotrophic~~ anisotropic optical domains; and

(b) transferring a portion of the recording medium to a carrier while maintaining a state of the anisotropic optical domains, wherein a portion of the recording medium has macroscopically detectable ~~anisotrophic~~ anisotropic optical properties.

10. (Original) The method according to claim 9, further comprising the step of accounting for said transferring step in an accounting database.

11. (Original) The method according to claim 9, further comprising the steps of: (a) defining a pattern of recording media on the carrier; (b) authenticating the carrier based on a correspondence of a subsequently detected pattern to the defined pattern; and (c) accounting for said authenticating step in an accounting database.

12. (Currently Amended) An imprinted carrier, produced by a method comprising the steps of: (a) providing a recording medium, having ~~anisotrophic~~ anisotropic optical domains; and (b) transferring a portion of the recording medium to a carrier while retaining a state of the anisotropic optical domains, wherein a portion of the recording medium has macroscopically detectable ~~anisotrophic~~ anisotropic optical properties.

13. (Original) The carrier according to Claim 12, wherein said carrier is associated with an object, wherein a message identifying the object is imprinted on the carrier.

14. (Previously Presented) An authentication device, comprising:

(a) an illumination source having a narrowband output adapted for exciting fluorescence at a wavelength differing from said narrowband output;

(b) a polarizer having a selectively controlled polarization axis;

(c) an optical filter to exclude the narrowband output and pass the fluorescence at the wavelength differing from said narrowband output;

(d) an optical imaging sensor directed toward an imaging region, for sensing dichroic elements and a recorded data pattern through said optical filter; and

(e) a processor for performing a digital background subtraction under a plurality of respective axes of said polarizer, for extracting a pattern of dichroic elements sensed by the optical imaging sensor within the imaging region, and for authenticating a medium supporting said dichroic elements based on a correspondence of the extracted pattern of dichroic elements and a predetermined pattern of dichroic elements defined in the recorded data pattern.

15. (Original) The device according to claim 14, wherein the illumination source comprises a broadband light source in series with a narrow band optical filter.

16. (Previously Presented) The device according to claim 14, wherein the polarizer comprises a rotating linear polarizer.

17. (Original) The device according to claim 14, wherein said optical filter comprises a broadband bandpass optical filter.

18. (Previously Presented) An optically readable data storage medium, comprising an optically readable substrate having a data pattern and a set of optically readable characteristics which are randomly determined by a non-deterministic physical manufacturing process, further comprising a recorded hash of identifications of the random optically readable characteristics and the data pattern associated with the data storage medium, the data pattern and the optically readable characteristics being adapted to be readable by a common imaging system, wherein the data storage medium is resistant to reproduction and alteration of the data pattern can be detected.

19. (Previously Presented) The storage medium according to claim 18, wherein the data storage medium comprises an identification card.

20. (Previously Presented) The storage medium according to claim 18, wherein the data pattern is molded into the data storage medium and the hash are formed as a pattern on a surface of the medium in a common plane with the molded data pattern.

21. (Previously Presented) A data storage disk, comprising a graphic-bearing surface, a code printed on the graphic bearing surface, and an ascertainable pattern formed during a physical non-deterministic manufacturing process formed on the disk, wherein the printed code provides self authentication for the disk based on the ascertainable pattern, the printed code and the ascertainable pattern being adapted to be readable by a common imaging system, wherein the data storage disk is resistant to reproduction.

22. (Previously Presented) An encoded optical disk reader, comprising:

(a) an optical sensor having a common optical path for reading authentication data on the disk, a pattern of non-deterministic characteristics formed during a physical manufacturing process of the disk, and data to be read from the disk, the data pattern being distinct and separate from said pattern of non-deterministic characteristics;

(b) a non-deterministic characteristic analyzer for analyzing the pattern of non-deterministic characteristics; and

(c) an authenticator, authenticating the disk based on an output of the non-deterministic characteristic analyzer and the authentication data.

23. (Original) The reader according to claim 22, wherein the optical sensor reads an optical encoding of the disk and the non-deterministic characteristic.

24. (Previously Presented) The reader according to claim 22, wherein the optical sensor is distinct from an optical sensor which reads an optical encoding of the disk while sharing the common optical path.

25. (Original) The reader according to claim 22, wherein the non-deterministic characteristic comprises a random reading defect of the disk.

26. (Original) The reader according to claim 22, wherein the non-deterministic characteristic comprises a dye pattern on the disk.

27. (Original) The reader according to claim 22, wherein the non-deterministic characteristic comprises a random distribution of fibers disposed on the disk.

28. (Original) The reader according to claim 22, wherein the optical sensor reads a self-authentication code from the disk.

29. (Previously Presented) Authenticating sealing tape, comprising a seal tamper indicator, a plurality of unique identification portions of the tape, periodically disposed along a length thereof, and an ascertainable non-deterministic characteristic of the tape in proximity to the periodic unique identification portions.

30. (Original) The authenticating sealing tape according to claim 29, wherein the ascertainable non-deterministic characteristic is a pattern selected from the group consisting of a random dye pattern and a random fiber pattern.

31. (Previously Presented) An authentication device, comprising:

(a) an illumination source having a narrowband output adapted for exciting fluorescence at a wavelength differing from said narrowband output, having a time-varying polarization axis;

(b) an optical filter to exclude the narrowband output and pass the fluorescence at the wavelength differing from said narrowband output;

(c) an optical imaging sensor directed toward an imaging region, for sensing dichroic elements and a recorded data pattern through said optical filter; and

(d) a processor for extracting a pattern of dichroic elements from a background, based on changes in an output of said optical imaging sensor under a plurality of respective polarization axes, and for determining whether the extracted pattern corresponds to a predetermined pattern.

32. (Previously Presented) The authentication device according to claim 31, wherein said illumination source comprises a light emitting diode.

33. (Previously Presented) The authentication device according to claim 31, wherein an intensity of said excited fluorescence varies over time.

34. (Previously Presented) The authentication device according to claim 31, wherein said optical imaging sensor comprises an area array imaging sensor.